# REMARKS

### Status of the Claims

Claims 1-18 have been rejected. In the Advisory Action mailed May 16, 2008, the Office indicated that claims 1, 9, and 12 as previously amended, would not be entered. In response, Applicant has amended claims 1, 9, and 12. In addition, Applicant has amended claims 2-8 and 13-17, canceled claims 9-11 and 18, and added new claims 19-24. No new matter has been added.

### Claims 1, 3-8, 12-15 and 17 Are Allowable

The Office has rejected claims 1, 3-9, 11-15 and 17-18, at paragraphs 1-2 of the Final Office Action mailed February 11, 2008 (the "Final Office Action"), under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent No. 6,870,836 ("Dyke") in view of U.S. Patent No. 6,608,874 ("Beidas"). Applicant has canceled claims 9, 11, and 18 without prejudice or disclaimer. Applicant respectfully traverses the rejections.

The cited portions of Dyke and Beidas fail to disclose or suggest the specific combination of claim 1. For example, the cited portions of Dyke do not disclose communicating an Internet Protocol (IP) signal and an Asynchronous Transfer Mode (ATM) signal via an optical medium, where the ATM signal is phase modulated based on the IP signal, as in claim 1. In contrast to claim 1, Dyke discloses a point-to-multipoint optical transmission system, which enables the transfer of IP traffic in its <u>native format</u> over a passive optical network (PON). *See* Dyke, column 6, lines 38-40. Further, Dyke discloses an optical transmission system to carry telecommunications signals over a PON in IP format <u>without the necessity for IP to ATM adaptation, or the ATM transport protocol over the PON</u>. *See* Dyke, col. 8, lines 54-59. The cited portions of Dyke do not disclose communicating an IP signal and an ATM signal via an optical medium, where the ATM signal is phase modulated based on the IP signal. Further, the cited portions of Beidas do not disclose this element of claim 1. Instead, Beidas discloses transmission of a modulated signal including multiple pulses that interfere with one another in time or frequency. *See* Beidas, column 2, lines 37-41. The cited portions of Beidas do not disclose communicating an IP signal and an ATM signal via an optical medium, where the ATM signal is phase modulated based on the IP signal. Therefore,

the cited portions of Dyke and Beidas, separately or in combination, do not disclose each and every element of claim 1. Hence, claim 1 is allowable.

Claims 3-8 depend from claim 1, which Applicant has shown to be allowable. Accordingly, claims 3-8 are also allowable, at least by virtue of their dependence from claim 1.

Further, the dependent claims recite additional features not disclosed by the cited portions of Dyke and Beidas. For example, the cited portions of Dyke and Beidas, separately or in combination, fail to disclose forming a combined ATM/IP signal by modulating a phase of the ATM signal based on the IP signal, as in claim 5. The Final Office Action admits that Dyke does not disclose phase modulating. *See* Final Office Action, page 4, line 3. Beidas, in contrast to claim 5, discloses combining means for combining pulses and data signals to form a combined signal that includes signal components based on the pulses and on the digital values of the data signals, where at least two of the signal components of the combined signal overlap in time and frequency. *See* Beidas, column 2, lines 50-56. The cited portions of Beidas do not disclose forming a combined ATM/IP signal by modulating a phase of the ATM signal based on the IP signal. For this additional reason, claim 5 is allowable.

The cited portions of Dyke and Beidas fail to disclose or suggest the specific combination of claim 12. For example, the cited portions of Dyke do not disclose a phase modulator adapted to phase demodulate a combined Asynchronous Transfer Mode (ATM)/Internet Protocol (IP) signal to extract an IP stream, where the combined ATM/IP signal has been received and where the combined ATM/IP signal comprises an ATM signal that has been phase modulated based on an IP signal, as in claim 12. The Final Office Action admits that Dyke does not disclose phase modulating. *See* Final Office Action, page 4, line 3. Further, the cited portions of Beidas do not disclose this element of claim 12. Instead, the demodulator of Beidas suppresses the intersymbol and cross-symbol interference of the modulated signal to recover the transmitted pulses and underlying data signals. *See* Beidas, column 12, lines 35-40. The cited portions of Beidas do not disclose a phase demodulator adapted to phase demodulate a combined ATM/IP signal to extract an IP stream. Therefore, the cited portions of Dyke and Beidas, separately or in combination, do not disclose each and every element of claim 12. Hence, claim 12 is allowable.

Claims 13 and 14 depend from claim 12, which Applicant has shown to be allowable. Accordingly, claims 13 and 14 are also allowable, at least by virtue of their dependence from claim 12.

The cited portions of Dyke and Beidas fail to disclose or suggest the specific combination of claim 15. For example, the cited portions of Dyke do not disclose apparatus to communicate an Asynchronous Transfer Mode (ATM) signal and an Internet Protocol (IP) signal, the apparatus including an optical line terminal (OLT) including a phase modulator configured to phase modulate the ATM signal based on the IP signal to produce a combined ATM/IP signal, as in claim 15. The Final Office Action admits that Dyke does not disclose phase modulating. *See* Final Office Action, page 4, line 3. Further, the cited portions of Beidas do not disclose this element of claim 15. Instead, the cited portions of Beidas disclose transmission of a modulated signal that includes multiple pulses that interfere with one another in time or frequency. *See* Beidas, column 2, lines 37-41. The cited portions of Beidas do not disclose or suggest a phase modulator configured to phase modulate the ATM signal based on the IP signal to produce a combined ATM/IP signal. Therefore, the cited portions of Dyke and Beidas, separately or in combination, do not disclose each and every element of claim 15. Hence, claim 15 is allowable.

Claim 17 depends from claim 15, which Applicant has shown to be allowable. Accordingly, claim 17 is allowable, at least by virtue of its dependence from claim 15.

Further, the dependent claims recite additional features not disclosed by the cited portions of Dyke and Beidas. For example, the cited portions of Beidas do not disclose that the phase modulator is configured to encode multiple bits of an <u>IP signal per pulse in an ATM signal</u>, as in claim 17. Instead, Beidas discloses transmission of a modulated signal having interfering pulses to a receiver, which is capable of demodulating the modulated signal and compensating for the interference. *See* Beidas, column 2, lines 36-41. Beidas does not disclose encoding bits of an IP signal in an ATM signal. For this additional reason, claim 17 is allowable.

### Claims 2 and 16 Are Allowable

The Office has rejected claims 2, 10, and 16, at paragraph 3 of the Office Action, under 35 U.S.C. §103(a), as being unpatentable over Dyke in view of Beidas, and further in view of U.S. Patent No. 3,701,106 ("Loshbough"). Applicant has canceled claim 10 without prejudice or disclaimer. Applicant respectfully traverses the remaining rejections.

As explained above, the cited portions of Dyke and Beidas do not disclose each and every element of claim 1, from which claim 2 depends. The cited portions of Loshbough do not disclose the elements of claim 1 that are not disclosed by the cited portions of Dyke and Beidas. For example, the cited portions of Loshbough do not disclose communicating an Internet Protocol (IP) signal and an Asynchronous Transfer Mode (ATM) signal via an optical medium, where the ATM signal is phase modulated based on the IP signal, as in claim 1. In contrast to claim 1, Loshbough discloses a detector for sensing change in data to determine whether or not the change is within tolerance and to determine whether or not data within tolerance remains in tolerance for a period. *See* Loshbough, Abstract. The cited portions of Loshbough do not disclose communicating an IP signal and an ATM signal via an optical medium, where the ATM signal phase is modulated based on an IP signal. Therefore, the cited portions of Dyke, Beidas, and Loshbough, separately or in combination, fail to disclose each and every element of claim 1, or of claim 2, which depends from claim 1. Further, the cited portions of Loshbough do not disclose that the ATM signal is phase modulated based on the IP signal without exceeding a specified tolerance of symbol period of the ATM signal, as in claim 2. Instead, Loshbough discloses a detection device for sensing change in data, such as a motion detecting device, which has digitally variable sensitivities. *See* Loshbough, column 1, lines 44-49. Further, the cited portions of Dyke and Beidas do not disclose or suggest this element of claim 2. Hence, claim 2 is allowable over the cited portions of Dyke, Beidas, and Loshbough.

As explained above, the cited portions of Dyke and Beidas do not disclose and every element of claim 15, from which claim 16 depends. The cited portions of Loshbough do not disclose the elements of claim 15 that are not disclosed by the cited portions of Dyke and Beidas. For example, the cited portions of Loshbough do not disclose an optical line terminal (OLT) including a phase modulator configured to phase modulate an ATM signal based on an

IP signal to produce a combined ATM/IP signal, as in claim 15. In contrast to claim 15, the cited portions of Loshbough disclose a detection device for sensing change in data, such as a motion detecting device, which has digitally variable sensitivities. *See* Loshbough, column 1, lines 44-49. Therefore, the cited portions of Dyke, Beidas and Loshbough, separately or in combination, do not disclose each and every element of claim 15, or of claim 16, which depends from claim 15. Further, the cited portions of Loshbough do not disclose that the phase modulator is further configured to phase modulate the ATM signal based on the IP signal without exceeding a specified tolerance of symbol period of the ATM signal, as in claim 16. Additionally, the cited portions of Dyke and Beidas do not disclose this element of claim 16. Hence, claim 16 is allowable.

### Claims 19-23 Are Allowable

Applicant has added new claims 19-23, which are supported by the Specification. Applicant respectfully submits that claim 19 is allowable. Claims 20-22 depend from claim 19, and are allowable at least by virtue of their dependence from claim 19.

Claim 23 depends from claim 12, which Applicant has shown to be allowable. Hence, claim 23 is allowable.
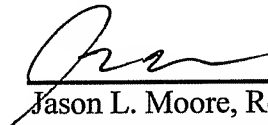
## CONCLUSION

Applicant has pointed out specific features of the claims not disclosed, suggested, or rendered obvious by the cited portions of the cited references as applied in the Office Action. Accordingly, Applicant respectfully requests reconsideration and withdrawal of each of the rejections, as well as an indication of the allowability of each of the pending claims.

The Examiner is invited to contact the undersigned attorney at the telephone number listed below if such a call would in any way facilitate allowance of this application.

The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-2469.

Respectfully submitted,

_Jane 11, 2008_
Date

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